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RF Exposure Evaluation Report

Report No.:	CQASZ20200901063E-02
Applicant:	ChicagoTronics, Inc.
Address of Applicant:	1736 W. Pierce Avenue. Chicago, Illinois USA

Equipment Under Test (EUT):

EUT Name:	Wireless Mouse
Model No.:	CKM620M
Brand Name:	Skilcraft
FCC ID:	2AHKSCKM620M
Standards:	47 CFR Part 1.1307
	47 CFR Part 1.1310
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2020-09-17
Date of Test:	2020-09-17 to 2020-10-12
Date of Issue:	2020-10-12
Test Result:	**PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By： *(Tiny You)*

Reviewed By: *(Sheek Luo)*

Approved By: *(Jack Ai)*

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200901063E-02	Rev.01	Initial report	2020-10-12

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3 General Information

3.1 Client Information

Applicant:	ChicagoTronics, Inc.
Address of Applicant:	1736 W. Pierce Avenue. Chicago, Illinois USA
Manufacturer:	Dongguan Lingjie Electronics & Technology Co.. Ltd
Address of Manufacturer:	No.16 Zhenxing North Road, Xiegang, Dongguan, China.
Factory:	Dongguan Lingjie Electronics & Technology Co.. Ltd
Address of Factory:	No.16 Zhenxing North Road, Xiegang, Dongguan, China.

3.2 General Description of EUT

Product Name:	Wireless Mouse
Model No.:	CKM620M
Trade Mark:	Skilcraft
Hardware Version:	V 1.0
Software Version:	V 7.0
Frequency Range:	2403.85M-2479.85MHz
Modulation Type:	GFSK
Number of Channels:	16 (declared by the client)
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	RF test (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	2.34dBi
Power Supply:	1*AA battery, DC 1.5V

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

    f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
    The result is rounded to one decimal place for comparison
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation

distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.2 EUT RF Exposure Evaluation

1) For 2.4G

eirp = pt x gt = $(E \times d)^2/30$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,   ---$10^{((dB\mu V/m)/20)}/10^6$,

d = measurement distance in meters (m)---3m,

So pt = $(E \times d)^2/30 / gt$

The worst case (refer to report CQASZ20200901063E-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
2403.85	89.34	Peak
2403.85	87.21	Average

For 2403.85MHz wireless:

Field strength = 89.34dBµV/m @3m

Ant. gain 2.34dBi; so Ant numeric gain=1.71

So pt=$\{[10^{(89.34/20)}/10^6 \times 3]^2/30 /1.71\} \times 1000mW$ =0.15mW

So (0.15mW/5mm)x $\sqrt{2.40385GHz}$ = 0.05

0.05<3.0 for 1-g SAR

So the SAR report is not required.